

WHAT IS CLAIMED IS:

1. A fuel cell, comprising a tubular polymer electrolyte membrane, with a fuel electrode on one of inner and outer sides of the membrane, and with an air electrode on the other side of the membrane.

2. The fuel cell according to claim 1, wherein said fuel electrode and said air electrode each are composed of a carbon particle material on the surface of which catalyst fine-particulates are dispersed and loaded.

3. The fuel cell according to claim 1, wherein said tubular polymer electrolyte membrane has a catalyst layer deposited or coated on a surface thereof.

4. The fuel cell according to claim 1, wherein fuel is brought into contact with said fuel electrode on the surface of said tubular polymer electrolyte membrane, and an oxidizer is brought into contact with said air electrode on the surface of said tubular polymer electrolyte membrane.

5. The fuel cell according to claim 1, wherein said fuel cell is utilized as a power source of a portable

device.

6. The fuel cell according to claim 1, wherein the fuel electrode is provided on the inner side of the membrane, and the air electrode is provided on the outer side of the membrane.

7. The fuel cell according to claim 1, wherein the fuel electrode is provided on the outer side of the membrane, and the air electrode is provided on the inner side of the membrane.

8. The fuel cell according to claim 1, which is a small fuel cell.

9. The fuel cell according to claim 1, wherein the tubular polymer electrolyte membrane has an inner diameter of 0.2 to 10 mm, an outer diameter of 0.5 to 12 mm, and a length of 20 to 1,000 mm.